

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

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Nuclear power plant of 5,000 kilowatt capacity will be built by Westinghouse Electric Corp. for General Public Utilities Corp.'s Pennsylvania Power Co. subsidiary at Saxton, Pa. Westinghouse has retained Gilbert Associates, Inc., Reading, Pa., as sub-contractors for engineering and construction of the facility. Engineering is now underway, and Westinghouse expects to start construction in May, 1959. The reactor is scheduled for operation during the Summer of 1961; it will be used with an existing turbine generator unit at the Saxton station. The plant, of the pressurized water type, will be similar in principle to reactors nearing completion for Centre d'Etudes Nucleaire of Mol, Belgium, and for Yankee Atomic Electric Co., Rowe, Mass.; both of these also were developed by Westinghouse's atomic power department. Estimated cost of the Westinghouse job has been placed by industry observers at about \$10 million. (Other BUSINESS NEWS, p. 5 this LETTER.)

Contract to conduct an experimental graphite irradiation program has been awarded Nuclear Development Corp. of America, White Plains, N.Y., by Brookhaven National Laboratory, Upton, N.Y. Under terms of the contract, Nuclear Development will develop and fabricate a capsule containing several uranium impregnated graphite samples and subject them to irradiation in the Materials Testing Reactor at the national reactor testing station, Idaho Falls, Idaho, at specified thermal neutron flux and temperature. The company will supervise the irradiation program in Idaho and disassemble the capsule at its Pawling, N.Y., laboratories before delivering the irradiated samples and temperature exposure records to Brookhaven. (Other CONTRACT NEWS, p. 2 this LETTER.)

Special unit to study the long-range impact of nuclear energy on matters of public health has been set up by School of Medicine, University of Chicago, and will be known as Section on Nuclear Medicine. Rockefeller Foundation will supply \$500,000 for the new unit, and the University and other sources will provide additional funds. Problems to be explored will include: 1. Increase in natural background radiation due to by-products of nuclear energy devices. 2.- Genetic and physiologic consequences of the increased exposure of man and domestic animals to ionizing radiation. 3.- Existing and proposed legislative controls of factors responsible for increased exposure to radiation. 4.- Medico-legal aspects of personal injury and compensation problems of persons in the nuclear energy industry. 5.- Psychological reactions of society to the threatening aspects of nuclear energy.

An additional 20,000 square feet will be added to High Voltage Engineering Corp.'s existing facilities at Burlington, Mass., to provide a larger manufacturing area and increased space for advanced research and development. The new wing, 80 x 254 ft., will be financed entirely out of retained earnings of High Voltage, designer and builder of particle accelerators, which has just had its best year in its history. (Other MANUFACTURERS' NEWS, p. 3 this LETTER.)

ATOMIC ENERGY CONTRACT NEWS...

Contract in amount of \$650,000 has been received by Leeds & Northrup Co., Philadelphia, from Argonne National Laboratory, for complete instrumentation and control systems for the Experimental Breeder Reactor No. 2 now under construction at the USAEC's national reactor testing station, Idaho Falls, Idaho. The contract calls for delivery of the instrumentation system to the site by next Fall; in dollar volume, it is L&N's largest to date for any single reactor facility. (EBR-2 is first U.S. civilian power reactor experiment to operate on recycled fuel. Previously L&N had supplied instrumentation for the Argonne Low Power Reactor, dedicated at the reactor testing station last Dec. 2.)

Under contract awarded General Electric Co. by Phillips Petroleum Co., GE's atomic power equipment department will supply 1,412 flat, plate-type elements for the USAEC's engineering test reactor at the national reactor testing station, Idaho Falls. Phillips is contract-operator for the Commission of the reactor. GE obtained the contract on a negotiated-competitive basis, with Phillips holding an option to order an additional 684 elements. It is believed to be one of the largest orders for plate-type nuclear fuel placed in the U.S. The fuel will be supplied over 18 months; manufacturing will be at GE's nuclear fuel production facilities at San Jose, Calif., operated by its atomic power equipment department.

Controls for Radiation, Inc., Cambridge, Mass., has received contract from Air Force Cambridge Research Center, Hanscom Field, Bedford, Mass., for performance of all nuclear radiation protection services required at the Center. The health physics services covered by this contract include calibration and maintenance of radiation measurement instruments; radiation surveys and smear tests; radioactive waste disposal; urinalysis for radioactivity; emergency decontamination; and the handling of all necessary records. (Controls for Radiation specializes in radiation safeguards; Irving A. Berstein, president, notes that an increasing number of nuclear facilities are contracting out such work.)

Bids have been asked by the USAEC's Hanford Operations office on Phase III construction work on plutonium pilot plant facilities at Hanford Works. For additional information on this construction, address the USAEC at Richland, Wash.; bid deadline date is Feb. 11, 1959.

MEETINGS, COURSES, CONFERENCES...

MEETINGS:- Seventh annual meeting of the Radiation Research Society has been scheduled for May 18, 19 and 20, 1959, in Pittsburgh, Pa. Further information may be obtained from E. L. Powers, secretary-treasurer of the society, Argonne National Laboratory, Box 299, Lemont, Ill.

Five scientific meetings will be held during 1959 by the International Atomic Energy Agency, which is headquartered in Vienna, Austria. First conference will be a three-day seminar in Vienna, beginning Feb. 25, 1959 on scanning of medical radioisotopes. In July there will be a seminar at Saclay, France, on training specialists in useful applications of atomic energy. A six day conference in Warsaw on use of large radiation sources in industrial applications, especially chemical processes, is scheduled for September. The standardization of radioisotopes will be discussed at a symposium on radioactive metrology, the science of weights and measures, to be held in Vienna in October. A conference will be held in Monaco in November on radioactive waste disposal. (An IAEA panel of experts, set up in October, 1958, is studying the question of radioactive waste disposal in the sea; the conference is designed to supplement the panel's efforts.)

SYMPOSIA:- Some 400 nuclear engineers from the U. S. and abroad are expected to attend the First International Symposium on Nuclear Fuel Elements to be held next week (Jan. 28-29) in New York. Registrations have been received from more than 60 representatives from 17 foreign countries for the symposium, which is jointly sponsored by Sylvania-Corning Nuclear Corp., Bayside, N.Y., and Columbia University.

PEOPLE...in nuclear energy work...

Frank B. Jewett, Jr., has been elected executive vice-president of Vitro Corp. of America; William B. Hall has been made a vice-president of the firm. Mr. Jewett has been a Vitro vice-president for three years. Mr. Hall, who had been president of Vitro Uranium Co., will assume charge of Vitro companies engaged in chemical and metallurgical operations.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Radiation monitoring system, Model AMS II, consists of 10 individual stations, alarm system, and centralized power supply. One or more channels can be removed from the circuit without disturbing the others. An accuracy of plus-or-minus 10% is claimed for the system. --Riggs Nucleonics Corp., 717 N. Victory Blvd., Burbank Calif.

Two radiochemicals are available commercially for the first time in the U.S. from this producer. Cortisone-4-Cl⁴ and thymidine-2-Cl⁴, now being offered, have previously been obtainable only in small quantities. -- New England Nuclear Corp., 575 Albany St., Boston 18, Mass.

Trade-named Banshee, a new low-cost device warns of radioactive fallout. Essentially an ionization chamber, it is for use in conjunction with household radio or television receivers. It can be made sensitive to 100 mr per hour, manufacturer claims, and is said to function up to 1 roentgen per hour and beyond. --Tracerlab, Inc., Waltham, Mass.

PRODUCT NEWS:- A proposed amendment to the byproduct material (radioisotopes) regulation (10 CFR 30) of the USAEC has now been published by the Commission for public comment. It would simplify licensing of sealed devices containing radioisotopes used in research and quality control of products. The amendment would place a number of measuring and gauging devices, and devices for producing light and ionizing air, under so-called "general license" when they can be safely used by untrained persons. Commission control of the devices and their distribution would be exerted through specific licenses to the manufacturers.

Demonstrated last week in Washington by the USAEC was a five pound device capable of generating 5 watts of electricity by the thermoelectric principle. Developed by The Martin Co., Baltimore, under a USAEC contract, the thermoelectric materials furnished by Minnesota Mining & Manufacturing Co., St. Paul, Minn., acting as sub-contractor were rods of lead telluride alloyed with other substances. Heat source, polonium-210, was encapsulated in molybdenum; some 3,000 curies were used with a temperature of more than 700 deg. F. attained. Experiments are being conducted under the USAEC's System for Auxiliary Power Program of the Aircraft Reactors Group.

The Japanese Government will buy 3,000 kg of natural uranium in ingot form from the International Atomic Energy Agency at a price fixed by the IAEA's board of governors of \$35.50 per kg. The IAEA had received offer of three tons of natural uranium to be supplied free by the Canadian Government's Eldorado Mining & Refining, Ltd., after it had advertised for world-wide bids. (The Union of South Africa has offered to supply the IAEA with uranium oxide at \$21 per kg, in the form of a calcined concentrate with a uranium oxide content of about 80%. Shipments would be made by the Atomic Energy Board of South Africa. Similar uranium oxide was also offered to the Agency by the Societe Generale des Minerals, Brussels, at a price of approximately \$18 per kg.)

MANUFACTURERS' NEWS:- A \$250,000 expansion of its rolling mill, machining, annealing, and slab-rolling facilities at the Elmore plant of Brush Beryllium Co., Cleveland, is now underway. The company expects that work will be completed by April 1, 1959.

Charles Walsh Associates, Deerfield, Ill., has now been appointed midwest sales representatives for the nuclear shielding products manufactured by Ameray Corp., Kenil, N.J. The firm will also sell photo-multiplier and secondary emission tubes manufactured by EMI Electronics, Ltd. (London, England). Mr. Walsh and his men will cover the ten state area of Minn., Iowa, Missouri, Kentucky, Tennessee, Ohio, Michigan, Wisconsin, Illinois, and Indiana for these firms.

Propulsion plant for Great Britain's first nuclear powered submarine, Dreadnought, will be supplied by Westinghouse Electric Corp. It has been planned at 4,500 tons displacement, as against the U.S.'s first craft, Nautilus, with 3,747 tons displacement. Speed (not disclosed) is also to be greater than Nautilus. Construction schedule of Dreadnought places sea trials in 1961. (The Halibut, first U.S. nuclear powered submarine capable of firing a guided missile, was launched last fortnight at the U.S. Navy's Mare Island shipyard, Vallejo, Calif. Its nuclear reactor, of the pressurized water type, was designed and developed by Westinghouse.)

MANUFACTURERS' LITERATURE:- Radiation Monitoring With Kodak Personal Monitoring Films is new pamphlet available from Eastman Kodak Co., Rochester 4, N.Y.

ATOMIC ENERGY PATENT DIGEST...

ISSUED January 6, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Deleeding of gasoline by irradiation. John F. German, Edward F. Degering, inventors. No. 2,867,572 issued to inventors of record. (2) Method and device for the sensing of neutrons. H. Welker, R. Gremmelmaier, inventors. No. 2,867,727 assigned to Siemens-Schuckertwerke AG, Berlin, Germany. (3) Logging apparatus. H. C. Pollock, inventor. No. 2,867,728 assigned to General Electric Co.

ISSUED January 6, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Method for removing contamination from precipitates. G. W. Stahl, inventor. No. 2,867,500 assigned to USAEC. (2) Volatile chloride process for the recovery of metal values. W. R. Hanley, inventor. No. 2,867,501 assigned to USAEC. (3) Plutonium-cerium alloy. A. S. Coffinberry, inventor. No. 2,867,530 assigned to USAEC. (4) Oxalate process for separating element 94. J. W. Gofman, inventor. No. 2,867,640 assigned to USAEC. (5) Regenerative phantastron time delay circuit. D. B. Churchill, inventor. No. 2,867,721 assigned to USAEC. (6) Secondary electron multipliers. G. A. Morton, M. W. Green, inventors. No. 2,867,729 assigned to USAEC. (6) Heavy ion linear accelerator. C. M. Van Atta, E. R. Beringer, L. Smith, inventors. No. 2,867,748 assigned to USAEC. (7) Circular cavity slot antenna. P. R. Kerley, inventor. No. 2,867,803 assigned to USAEC.

ISSUED January 13, 1959 to GOVERNMENTAL ORGANIZATIONS:- (1) Method of concentrating mineral values. F.N. Oberg, inventor. No. 2,868,618 assigned to USAEC. (2) Process for recovery of plutonium. D. M. Ritter, inventor. No. 2,868,619 assigned to USAEC. (3) Method of making plutonium dioxide. C. S. Garner, inventor. No. 2,868,620 assigned to USAEC. (4) Process of preparing uranium metal. C. H. Prescott, Jr., F. L. Reynolds, inventors. No. 2,868,636 assigned to USAEC. (5) Device for charging or discharging. S. Untermyer, E. Hutter, inventors. No. 2,868,706 assigned to USAEC. (6) Process of making a nuclear reactor fuel element composition, H. W. Alter, J. K. Davidson, R. S. Miller, J. L. Mewherter, inventors. No. 2,868,707 assigned to USAEC. (7) Nuclear reactor. H. C. Vernon, inventor. No. 2,868,708 assigned to USAEC. (8) Plutonium-cupferron complex and method of removing from solution. H. A. Potratz, inventor. No. 2,868,817 assigned to USAEC. (9) Resonant cavity excitation system. W. R. Baker, Q. A. Kerns, inventors. No. 2,868,974 assigned to USAEC. (10) Liquid target. W. W. Salsig, M. D. Martin, inventors. No. 2,868,987 assigned to USAEC. (11) Neutron source. W. A. Reardon, D. H. Lennox, inventors. No. 2,868,990 assigned to USAEC. (12) High energy gaseous plasma containment device. V. Josephson, J. E. Hammel, inventors. No. 2,868,991 assigned to USAEC. (13) Reactor viewing apparatus. G. S. Monk, inventor. No. 2,868,992 assigned to USAEC.

ISSUED January 13, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Oxidation resistant carbon and graphite bodies. N. J. Johnson, J. D. Nickerson, inventors. No. 2,868,672 assigned to Union Carbide Corp., New York, N.Y.

NOTE:- U. S. Pat. No. 2,866,098, appearing in this LETTER Jan. 6, 1959 (Vol. 20, No. 11) was not issued as application was withdrawn. The invention was titled Measuring and Controlling System, with F. M. Alexander the inventor; assignment was made to Industrial Nucleonics Corp.

NEW BOOKS & OTHER PUBLICATIONS...

Disposal of Radioactive Waste. K. Saddington, W. L. Templeton, Windscale plant, U.K. Atomic En. Author. Methods of handling unwanted waste products from the atomic energy industry; safe limits for discharge; problems of the future; etc. 102 pages. (Published by George Newnes, Ltd., London W.C.2.) --The Macmillan Co., 60 Fifth Ave., New York 11, N.Y. (\$3.50)

The Physical Theory of Neutron Chain Reactors. E.P. Wigner, A.M. Weinberg. The mathematical and nuclear theory that underlies design of chain reactors. -- University of Chicago Press, Chicago, Ill. (\$6.50)

NOTES:- List No. 37, compiled by the Library, Atomic Energy Research Establishment, Harwell, England, is new group of publications most recently made available to the public. Included are original documents and translations issued by the Research Establishment and other papers.

Power Reactor Technology, Vol. 2, No. 1, dated December 1958, is recent review prepared for the USAEC by General Nuclear Engineering Corp., Dunedin, Fla.

ATOMIC ENERGY BUSINESS NEWS...

NEW SUBSIDIARY ESTABLISHED:- A new wholly owned subsidiary to be known as Mallinckrodt Nuclear Corp. has been set up by Mallinckrodt Chemical Works, St. Louis, Mo. The new unit will take over the facilities--which include a \$2 million plant at Hematite, Mo.--and the personnel of Mallinckrodt's special metals division. The plant has processed more than 150,000 lbs. of enriched uranium hexafluoride into nuclear reactor fuel elements. Mallinckrodt was the first U.S. firm to enter this field commercially, with the Hematite plant the first privately owned nuclear processing plant in the U.S.

GOOD EARNINGS SHOWN BY CANADIAN URANIUM PRODUCER:- Gunnar Mines (Canada) showed 1958 production total of an estimated \$23,925,000 or \$33.94 per ton, up from the \$19,107,632 total or \$31.79 per ton registered in 1957. Net profit is calculated for 1958 at \$11,219,558 or \$3.22 per share, compared with net of \$2.58 per ton earned in 1957. (Gunnar's supplementary contract with Eldorado Mining & Refining, for which letter of intent was received in 1956, has now been formalized. It provides for the sale of an additional \$40,000,000 of uranium concentrates to be delivered by Mar. 31, 1962. Gunnar's original contract called for \$76,950,000 of uranium concentrates to be delivered by Oct., 1960.)

NEW CONSULTING FIRMS FORMED:- Two new nuclear consulting firms have recently been established in the U. S., both in Connecticut: Arthur V. Peterson Associates has been formed by Mr. Peterson, with headquarters in Westport, Conn.; David M. Schoenfeld has set up a firm in New Canaan, Conn. Mr. Peterson resigned as vice-president of AMF Atomics to form his new firm; prior to joining AMF in 1953 he had been associated with government nuclear work in the U.S. since 1942. Mr. Schoenfeld was formerly executive assistant to the vice-president of Combustion Engineering, Inc., and prior to that had been manager of the firm's marine engineering and nuclear power divisions. His new consulting nuclear engineering practice is in all phases of stationery, marine, and nuclear steam power plant design, engineering, construction and project management.

FINANCIAL ASSISTANCE GRANTED FOR KOREAN NUCLEAR RESEARCH PROJECT:- Allocation of \$350,000 is being made by the U. S. to the Republic of Korea to assist in financing a Korean research reactor project which will represent a total investment of more than \$1 million. Letter of commitment has been given Korea; Mutual Security Program funds will be paid upon completion of the project. A 1,127 acre site at Paktai-ri, about 17 miles south of Seoul, has been set aside for a National Atomic Research Institute, with the research reactor project forming the nucleus of this Institute. General Dynamics Corp.'s General Atomic division, San Diego, is supplying the multi-purpose 1000-kw solid homogeneous reactor.

PLAN OUTLINED FOR NUCLEAR DETONATION TO RECOVER SHALE OIL:- Recent Dallas meeting held by USAEC-Bureau of Mines for petroleum and chemical people was given details of the joint program of the Commission and BofM to extract shale oil with underground nuclear explosions. Plan is to set off this detonation early in 1960 in Colorado's shale deposits to determine whether economic recovery of oil may be possible by this method. As outlined, the USAEC would contribute \$1 million of the cost; Bureau of Mines \$400,000; and the oil industry \$1.2 million. First industry payment of \$350,000 would be due by July 1, 1959 and the remainder to be due by July 1, 1960 under an agreement that would become effective May 1, 1959 and would terminate July 1, 1961. Plan was presented at the meeting by C. C. Anderson, chief petroleum engineer of the Bureau of Mines. Savings over present shale preparation processes are expected to be realized in mining, shale preparation, and retorting the broken shale. (Involved are more than a dozen major oil companies which own extensive properties in the Green River Basin in the Western states of Utah, Colorado, Wyoming; initial test would be in Piceance Creek Basin in Colorado and if successful could be used in other areas. Companies with property there include Standard Oil Co., of Calif.; Getty Oil Co.; Equity Oil Co.; and Socony Mobil Oil Co.)

Sincerely,

The Staff,
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